LONG REACH®

INSTALLATION, MAINTENANCE AND SERVICE MANUAL LP AND PLP

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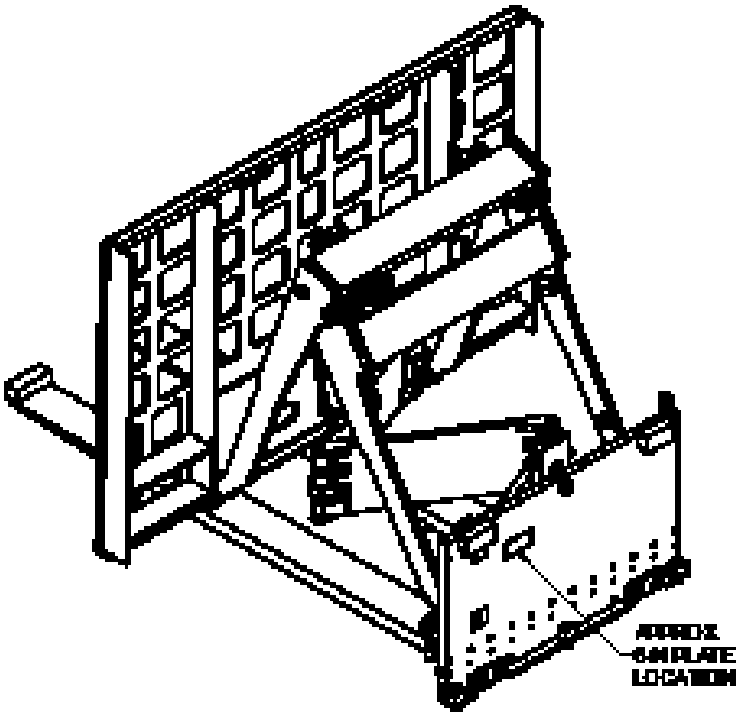
SECTION 1

NAMEPLATE LOCATION

NOTE: WHEN YOU RECEIVE YOUR ATTACHMENT, LOCATE THE LONG REACH NAMEPLATE (UPPER LEFT CORNER ON THE BODY) AND RECORD THE INFORMATION TO THE BLANK NAMEPLATE TAG WITH THE DATE RECEIVED IN THE SPACE PROVIDED ON THE BOTTOM OF THIS PAGE. IF THE NAME PLATE IS MISSING, LOOK FOR THE SERIAL NUMBER STAMPED DIRECTLY INTO THE METAL AT THE ORIGINAL LOCATION AND CONSULT FACTORY.



Date Received:

☐☐-☐☐-☐☐

Long Reach® A Division of Allied Systems Company

MODEL NO.:					
SERIAL NO.:					
MAXIMUM HYD. PRESS.:	PSI		WEIGHT:		LBS
CAPACITY:	LBS @	inch LC			
SEE TRUCK NAMEPLATE FOR COMBINED TRUCK & ATTACHMENT NET CAPACITY					
HOR. CG:	inches	VERT. CG:	inches	LOST LOAD /AET :	inches
CG AND AET SPECIFICATIONS ARE APPROXIMATE					

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www.alliedsystems.com 2500005 RC

SECTION 2

SAFETY SUMMARY

2.1 General Information

Safety is Everyone's Responsibility
Whether you are new on the job or a seasoned veteran, these safety tips may prevent injury to you, to others, or to the materials you are handling. Always be alert, watch out for others, and follow these suggestions:

Attachments Handle Material - Not People.

SAFETY STARTS WITH COMMON SENSE. GOOD JUDGEMENT, PROPERLY MAINTAINED EQUIPMENT, CAREFUL OPERATION, AND PROPERLY TRAINED OPERATORS.

1. ***Check*** your equipment before you operate it.

2. ***Check*** to make sure the attachment on your truck is the same as on the truck capacity plate.

3. ***Check*** for hydraulic leaks and cracked hoses or fittings.

4. ***Check*** the hydraulic oil level in the lift truck hydraulic reservoir.

5. ***Check*** for physical damage to the attachment. If anything looks wrong, unusual or different, report it before using the attachment.

6. ***When*** removing / installing dismountable attachments always keep hands and feet free from dangerous positions or pinch points. Never leave a dismounted attachment in a dangerous position.

7. ***Check*** to make sure that the dismountable attachment is properly secured to the truck carriage before using the lift truck and attachment.

8. ***Never*** stand on top of material being raised, lowered, or transported. (Figure 2-1)

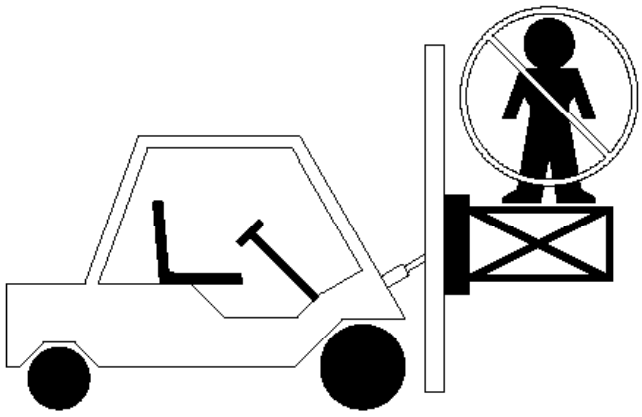

Figure 2-1

9. ***Never*** use the attachment or its load to support a man carrying device.

10. ***Never*** position an attachment or load over people. (Figure 2-2)

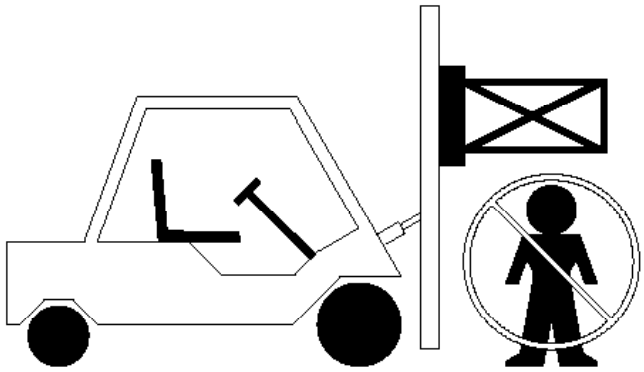

Figure 2-2

11. ***Never*** leave an attachment or load in an elevated position.

12. ***Never*** reach through the mast of the truck. Keep all parts of the body within the driver's compartment.

13. ***Never*** leave a lift truck unattended without lowering the load to the floor, setting the brake, and turning the truck off.

14. ***Always*** operate an attachment from the operator's seat, never while standing next to the lift truck.

15. ***Never*** stand in front of or beside an attachment that is being operated. Never allow another person to approach an attachment that is being operated. (Figure 2-3)

16. ***Do not*** allow riders on the truck at any time.

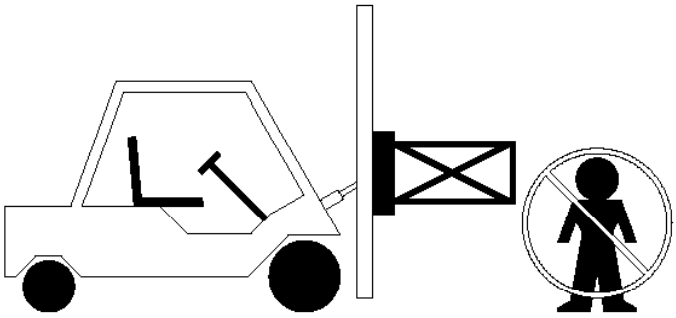

Figure 2-3

17. ***Always*** use reverse when carrying a load that impedes full vision.

18. ***Watch*** for pedestrians when transporting. Sudden stops can dislodge all or part of a load.

2.2 Load Handling

1. ***All*** operators must be trained and qualified.

2. ***Never*** overload the attachment. Refer to the attachment nameplate for the rated capacity of the attachment. Refer to the nameplate of the truck for the net working capacity of the truck and attachment. Observe the lower of the two capacities. The attachment capacity is the structural rating of the attachment and should not be exceeded. Net working capacity is the truck manufacturer's rating of the truck/attachment combination.

3. ***Never*** use a load to support or move another object. Doing so can easily exceed the holding capacity of the attachment, causing loss of the load.

4. ***Never*** lift, lower, side shift, pivot, rotate, or tilt loads while traveling. Repositioning loads while traveling affects the stability of the truck and may impede vision or clearances.

5. ***Never*** speed or race a lift truck. High speed adversely affects the stability and steering of the lift truck.

6. ***Do not*** use an attachment to open or close boxcar doors. Doing so can severely damage the attachment and cause loss of warranty. Damage to clamp arms may result in product damage.

7. ***Do not*** carry loose items or unsupported loads on top of a clamped load.

8. ***Never*** allow anyone under a load or under the carriage.

9. ***Never*** use chains, cables, or other devices in conjunction with an attachment for load handling.

10. ***Never*** clamp loads other than what the attachment was designed to handle.

11. ***Travel*** slowly around corners. Sound horn on blind corners. Be careful of tail swing and overhead clearances. Watch in all directions. Avoid sudden stops.

12. ***Do not*** exceed the specified maximum operating pressure or flow for the attachment. To do so can severely damage the attachment and cause loss of warranty.

2.3 Load Positioning

1. **Always** operate an attachment from the driver's seat.

2. **Always** lower the attachment if you need to leave the lift truck. Remember a lift truck supporting a load requires your full attention.

3. **Never** use the attachment or its load to support or move other loads or equipment.

4. ***Always*** carry loads as close to the floor as possible, consistent with the surface being traversed. Scraping or bumping the floor surface with the load or the attachment can severely damage the attachment and cause product damage. The mast should be tilted back.

5. ***Always*** keep the load positioned as close as possible to the horizontal center of the lift truck.

6. ***Always*** back down ramps or inclines. Driving forward down a ramp or incline with a clamped load will lessen the stability of the truck. (Figure 2-4)

7. ***Do not*** cross dock boards or dock levelers with the attachment or carriage fully lowered. Ramming the front or rear of the attachment against a dock board can cause severe damage.

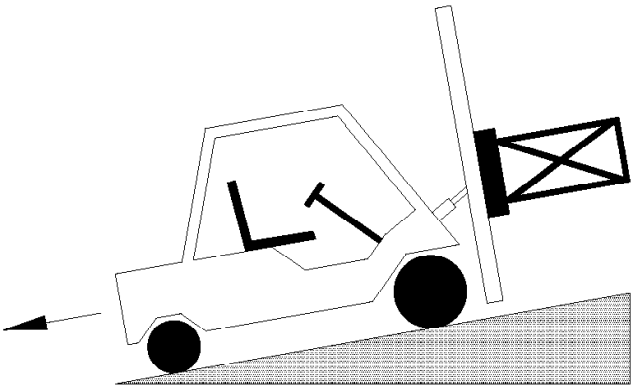

Figure 2-4

8. ***Always*** check loads to be handled. If they are broken, unbalanced, loose, or too heavy, advise a supervisor or properly correct the situation prior to handling.

9. ***Limit*** lift truck movement to a minimum when high stacking. Limit sideshift movement to a minimum when high stacking.

10. ***Always*** be observant when high stacking. Look for poorly stacked loads, overhead obstacles, broken cartons, or damaged products in the stack.

11. ***Always*** carry cylindrically shaped loads in the vertical position, not the horizontal.

12. ***Always*** clamp loads with the contact pads, if applicable, not the arm or arm base.

13. ***Never*** rotate a load that is off center to the centerline of rotation. Severe damage to the rotator could result.

14. ***Always*** check the attachment for proper fit and

2.4 Hydraulics

1. ***Be aware*** of the hazards of pressurized hydraulics:

2. ***Wear*** personal protective equipment, such as gloves and safety glasses, whenever servicing or checking a hydraulic system.

3. ***Assume*** that all hydraulic hoses and components are pressurized. Relieve all hydraulic pressure before disconnecting any hydraulic line.

4. ***Never*** try to stop or check for a hydraulic leak with any part of your body; use a piece of cardboard to check for hydraulic leaks. Small hydraulic hose leaks are extremely dangerous, and can inject hydraulic oil under the skin, even through gloves. Infection and gangrene are possible when hydraulic oil penetrates the skin. See a doctor immediately to prevent loss of limb or death.

2.5 Operator's Controls

1. For clarity, the direction of arm movement is shown on the control handle. To move the arms in the direction shown, pull the handle towards the operator. To move the arms in the opposite direction, push the handle away from the operator.

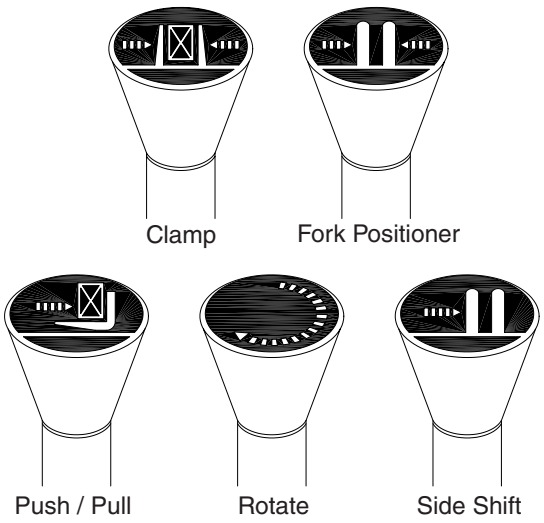

Figure 2-5

NOTE: OSHA OR STATE REGULATIONS MAY REQUIRE THE INSTALLATION OF BACKRESTS. WE SUGGEST THAT YOU CHECK YOUR APPLICATION AGAINST THOSE REQUIREMENTS.

SECTION 3

INSTALLATION AND REMOVAL

3.1 Hydraulics

1. Prior to connecting the truck hydraulic system to the attachment, the system must be cleaned through the filtration system. This will eliminate any contamination that may exist in the auxiliary hydraulic system of the truck.

2. Filtering can be accomplished by installing a jumper line and operating each equipped hydraulic function in each direction for a minimum of 30 seconds. (Figure 3-1)

⚠ WARNING

THE CAPACITY OF THE TRUCK AND ATTACHMENT COMBINATION MAY BE LESS THAN THE CAPACITY SHOWN ON THE ATTACHMENT ALONE. CONSULT TRUCK NAMEPLATE!

The lift truck hydraulic system must meet the following specifications:

1. Supply petroleum based hydraulic oil
2. 7-10 GPM (26.5-37.8 LPM)
3. 2200-2300 PSI (150-160 Bar)
4. At least one auxiliary function

NOTE: IT IS THE RESPONSIBILITY OF THE DEALER AND /OR THE USER TO INSTALL THE REQUIRED VALVING TO MEET THE RECOMMENDED HYDRAULIC PRESSURES AND FLOW. THE REQUIRED VALVING CAN BE FURNISHED BY THE DEALER, THE TRUCK FACTORY, OR LONG REACH.

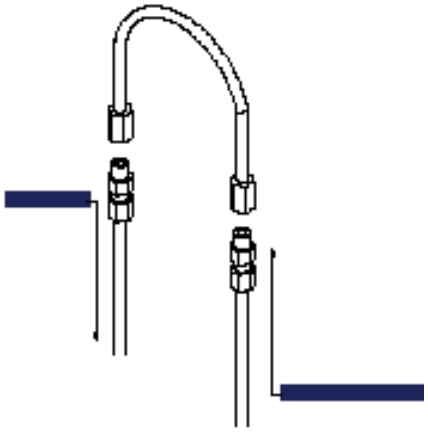

Figure 3-1, Jumper Line

3.2 Attachment Installation

1. Purging can be accomplished by installing a jumper line and operating each hydraulic function (clamp, rotate and side shift if equipped) in each direction for a minimum of 30 seconds. (Figure 3-1)

2. Remove the lower bolt-on hooks and, if applicable, make a note of any factory installed shims. If Quick Change Hooks are equipped, simply depress the button on the back of the hooks, allowing the slide plate to drop, Figure 3-2.

3. Center the truck behind the attachment and drive toward the attachment with the mast tilted forward approximately 4°.

4. Line up the locking lug (if applicable) with the appropriate notch on the truck's carriage. Check that the bronze side-shifting wear strips are in the proper place, if applicable.

5. Make sure the wear pad is in place and making contact with lower carriage bar.

⚠ WARNING

FAILURE TO CYCLE THE HYDRAULIC CIRCUIT AS DESCRIBED ABOVE COULD CAUSE SERIOUS INJURY.
IF HYDRAULIC SUPPLY HOSES ARE DISCONNECTED, HYDRAULIC FLUID WILL LEAK OUT AND PUSH PLATE MAY DRIFT OUTWARD.

3.4 Attachment Removal

1. Disconnect hydraulic connection at the attachment from the truck.

2. Disconnect the Quick Mounts to remove the attachment. (Figure 3.2)

3. Slightly raise the truck carriage to allow the removal of the bottom mounting hooks. If the attachment is equipped with Quick Change Hooks (Button-Type), press the slide plate release button and drop the slide plate down (Figure 3-2). If the attachment is equipped with Quick Change Hooks (Pin-Type), remove the Re-

taining Pin and the Quick Change Hook.

THIS SLIDE PLATE MUST "CLICK" INTO PLACE TO ENSURE THE ATTACHMENT IS SECURED TO THE CARRIAGE. IF THE SLIDE PLATE DOES NOT CLICK INTO PLACE, (BECAUSE THE TRUCK CARRIAGE PREVENTS THE SLIDE PLATE FROM BEING RAISED UP HIGH ENOUGH), SHIMS MUST BE INSTALLED BETWEEN THE ATTACHMENT AND THE BODY OF THE QUICK CHANGE HOOKS.

3.5 Hydraulic Connections

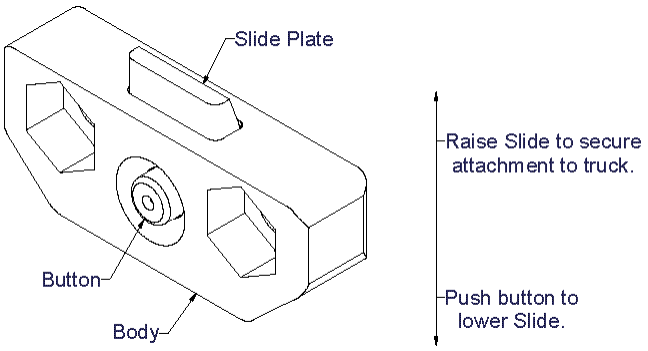

Figure 3.2 Quick Change Hook

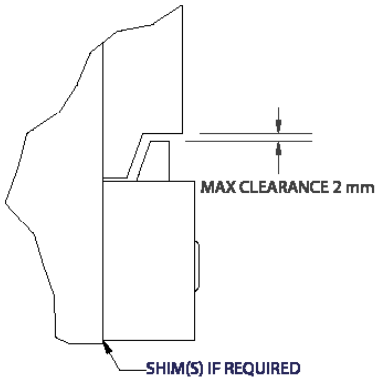

Figure 3-3, Lower Hook Clearance

⚠ WARNING

ANY ALTERATIONS TO THE ORIGINAL ATTACHMENT MAY AFFECT PERFORMANCE OR SAFETY AND RESULT IN LOSS OF WARRANTY.

2. Inspect installation to ensure hoses are not kinked or pinched between the truck carriage and attachment.

3. Operate the attachment continuously for several minutes to determine that all hydraulic connections are secure with no leaks.

4. Activate cylinders fully and check that the truck's hydraulic reservoir oil level is at the recommended level.

5. Before placing the attachment in operation check the following:

a. Inspect all hoses and fittings for leaks and routing clearance. Be sure to include clearance of jumper hoses to the mast.
b. Check the valve and cylinder for leaks.
c. Check cotter pins at each end of the cylinder for security.

6. After completing the installation, operate the attachment without a load for several cycles to remove any air in the hydraulic system. Test the attachment with a load to make sure the attachment operates correctly.

NOTE: IT IS THE RESPONSIBILITY OF THE DEALER AND / OR THE USER EAITHER TO FURNISH AND INSTALL THE REQUIRED VALVING TO MEET THE RECCOMENDED HYDRAULIC PRESSURES AND FLOW OR TO ARRANGE INSTALLATION OF THE REQUIRED VALVING AT THE TRUCK FACTORY OR AT LONG REACH. THE MODEL DESCRIPTION, FOUND ON THE SHIPPING INVOICE, WILL STATE THE FOLLOWING TRUCK REQUIREMENTS: FLOW (GPM), PSA, AND MIN, TRUCK CARRIAGE WIDTH.

⚠ WARNING

SECTION 4

MAINTENANCE

4.1 Schedule

Daily:

1. Visually inspect all hoses, fittings, cylinders, and valves for signs of hydraulic leaks.
2. Inspect hoses for wear/pinching and replace as required.
3. Inspect forks for nicks, dents, rough spots, and repair as required.
4. Visually inspect lower hook installation and check unit for external damage or cracks.

40 Hour Maintenance:

1. Complete the above daily checks.
2. Inspect retaining pins and replace as required.
3. Tighten mechanism pivot retaining pin bolts.
4. Lube bronze top hooks if needed.
5. Lube mechanism if desired. (Use Light Oil)
6. Check lower hook clearance (3/16" = 5mm maximum) and adjust as required.

500 Hour Maintenance

1. Perform 40 hour inspection.
2. Inspect bushings for excessive clearance (1/32" = 1mm maximum) at all pivots and replace as required.
3. Tighten and torque all bolts.
    a. Top Hooks: 225 N-m
    b. Lower Hooks: 225 N-m
    c. Fork Hooks: 225 N-m

Recommended Grease:

Mobile XHP222 Special, or similar quality EP-2 with Lithium Complex Base.

4.2 Torque Specifications

Metric Capscrews		Torque N-m (Ft-Lbs)	
Nominal Size	Pitch	Class 8.8	Class 10.9
M8	1.25	19 (14)	26 (19)
M10	1.50	38 (28)	52 (38)
M12	1.75	68 (48)	90 (66)
M14	2.00	105 (77)	145 (107)
M16	2.00	165 (122)	225 (166)

Ft-Lbs = (N-m/1.356)

Notes:

SECTION 5

SERVICE PROCEDURES

WHEN HYDRAULIC SERVICING HAS BEEN PERFORMED, BEFORE RETURNING ATTACHMENT TO SERVICE BE SURE TO ACTIVATE THE HYDRAULIC FUNCTIONS SEVERAL TIMES TO BLEED OUT TRAPPED AIR IN THE SYSTEM.

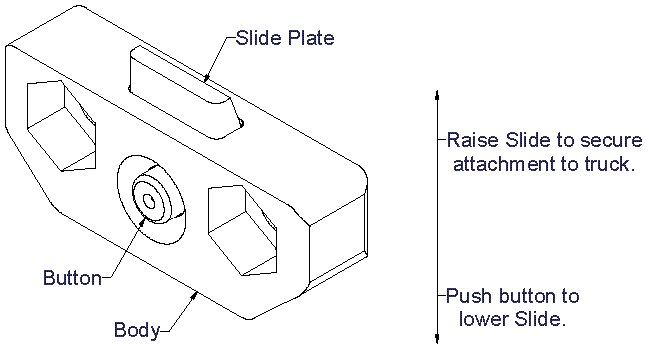

Figure 5-2 Quick Change Hook

THIS SLIDE PLATE MUST "CLICK" INTO PLACE TO ENSURE THE ATTACHMENT IS SECURED TO THE CARRIAGE. IF THE SLIDE PLATE DOES NOT CLICK INTO PLACE (BECAUSE THE TRUCK [illegible]NTS THE SLIDE PLAT[illegible]SED UP HIGH ENOUGH), S[illegible]TALLED BETWEEN THE[illegible] THE BODY OF THE QUICK

CAUTION

PINCH POINT

WARNING

[illegible] OFF THE TRUCK'S POWER AND ACTIVATE THE TRUCK'S HYDRAULIC FUNCTIONS IN BOTH DIRECTIONS TO BLEED OFF HYDRAULIC PRESSURE.

5.1 Cylinder Installation

1. Install the clevis pin and cotter pin into the base end of the cylinder.

WARNING

3. Extend the cylinder until the rod end hole lines up with the mounting hole. Install the clevis pin and cotter pin into the end of the cylinder.

5.2 Cylinder Removal

1. Disconnect the hydraulic connections.

2. Remove the cylinder rod end cotter pin and clevis.

3. Remove cotter pin and clevis pin at the base of the cylinder.

WARNING

FAILURE TO CYCLE THE HYDRAULIC CIRCUIT AS DESCRIBED ABOVE COULD CAUSE SERIOUS INJURY.

5.3 Cylinder Disassembly

1. Remove the cylinder from the attachment. See removal instructions.

2. Clamp the cylinder lightly at the base end in a soft jawed vise. Use a block or other support under the rod end of the cylinder. (Figure 5-3)

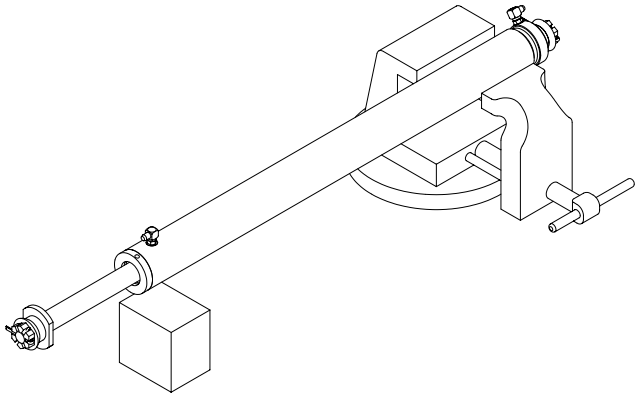

Figure 5-3, Cylinder Vise

3. Use a spanner wrench or similar tool to unscrew the gland cap from the cylinder tube. (Figure 5-4)

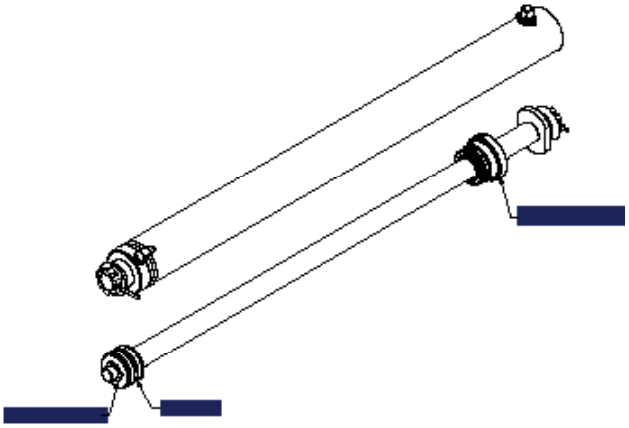

Figure 5-4, Cylinder Rebuild

4. Remove the rod assembly from the cylinder tube.

5. Clamp the rod assembly in a soft jawed vise on the wrench flats, **not on the rod surface**. If the rod does not have wrench flats use two pieces of wood on both sides of the rod to prevent scarring. (Figure 5-8)

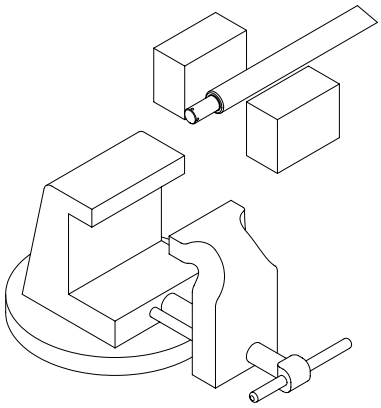

Figure 5-5, Cylinder Shaft

6. Remove the piston retaining nut and remove the piston. (Figure 5-4)

7. Carefully pry up on the piston seals using a blunt tip screw driver being careful not to scratch the seal grooves. Cut the seals to remove from the piston. (Figure 5-6)

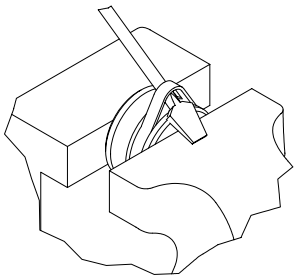

Figure 5-6, Piston Seal

8. Use the same procedure as above to remove the seals from the gland cap.

5.4 Cylinder Inspection

Inspect the cylinder tube bore for:
1. Deep scratches or nicks.
2. Signs of galling or excessive wear.
3. Out-of-roundness or deformities of the barrel.

Inspect the Piston for:
1. Scratches or nicks on seal grooves.
2. Wear on O.D.

Inspect the Cylinder Rod for:
1. Scratches or nicks on the rod surface.
2. Straightness of the rod.
3. Damaged threads.

Inspect the Gland Cap for:
1. Scratches or nicks in seal grooves.
2. Damaged threads or spanner wrench holes.
3. Excessive wear in bore.

Replace any component found to be bad.

5.5 Cylinder Assembly

1. Spray the Piston, Gland Cap, and Seals with WD40 or other similar product to ease slipping of the seals in place.

2. Note the direction of the seal on the piston. Improper installation will result in poor performance. The cupped side or O-Ring side of the seal should be facing the gland cap. (Figure 5-10)

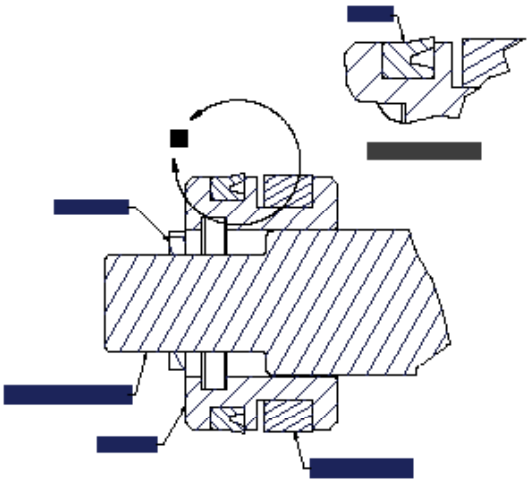

Figure 5-10, Piston Seal

3. Install the seals and wipers in the gland cap. Note the direction of the seals. The cupped side or O-Ring side of the seal should be facing the piston. (Figure 5-11)

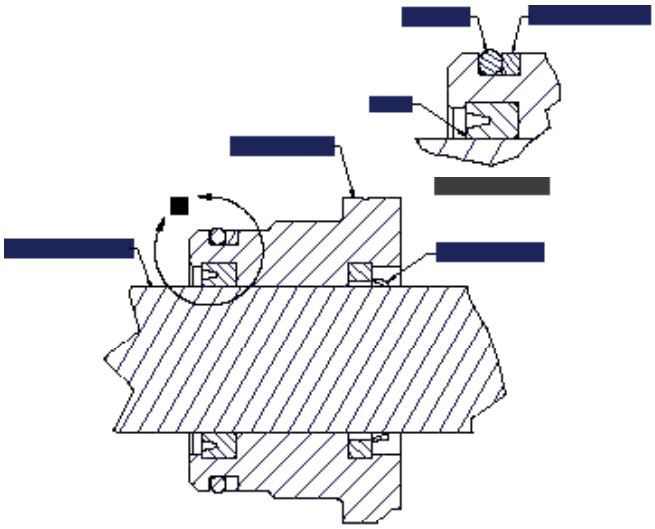

Figure 5-11, Gland Cap Seal

4. Install the piston on the rod and tighten the locknut to 70-75 ft-lbs.

5. Spray the inside of the cylinder tube with lubricant to ease inserting the rod and piston. Insert the rod and piston into the cylinder tube. Tap the rod in with a rubber mallet if resistance is encountered.

6. Install the gland cap on the cylinder rod being extremely careful not to cut the rod seal on the threads of the rod or rod shoulder. If available use a sleeve to cover the rod threads or plastic electrical tape.

7. Tighten the gland cap using a spanner wrench.